CLAIMS

1. Defective recombinant adenovirus containing a DNA sequence encoding brain-derived neurotrophic factor (BDNF) or a derivative thereof.

2. Adenovirus according to Claim 1, characterized in that the DNA sequence encodes prepro-BDNF.

3. Adenovirus according to Claim 1 or 2, characterized in that the DNA sequence is a cDNA sequence.

4. Adenovirus according to Claim 1 or 2, characterized in that the DNA sequence is a gDNA sequence.

5. Adenovirus according to one of Claims 1 to 4, characterized in that the DNA sequence encodes human prepro-BDNF.

6. Adenovirus according to one of Claims 1 to 5, characterized in that the DNA sequence is placed under the control of signals permitting its expression in nerve cells.

7. Adenovirus according to Claim 6, characterized in that the expression signals are chosen from viral promoters, preferably from the E1A, MLP, CMV and RSV-LTR promoters.

8. Defective recombinant adenovirus comprising a cDNA sequence encoding human prepro-BDNF, under the control of the RSV-LTR promoter.

9. Defective recombinant adenovirus

comprising a gDNA sequence encoding human prepro-BDNF, under the control of the RSV-LTR promoter.

10. Defective recombinant adenovirus comprising a DNA sequence encoding human brain-derived neurotrophic factor (hBDNF) or a derivative thereof under the control of a promoter permitting predominant expression in the nerve cells.

11. Defective recombinant adenovirus according to Claim 10, characterized in that the promoter is chosen from the neuron-specific enolase promoter and the GFAP promoter.

12. Adenovirus according to one of Claims 1 to 11, characterized in that it lacks regions of its genome which are necessary for its replication in the target cell.

13. Adenovirus according to Claim 12, characterized in that it comprises the ITRs and a sequence permitting encapsulation, and in which the E1 gene and at least one of the E2, E4 or L1-L5 genes are nonfunctional.

14. Adenovirus according to Claim 12 or 13, characterized in that it is a type Ad 2 or Ad 5 human adenovirus or a CAV-2 type canine adenovirus.

15. Use of an adenovirus according to one of Claims 1 to 14, for the preparation of a pharmaceutical composition intended for the treatment and/or prevention of neurodegenerative diseases.

16. Use according to Claim 15, for the

preparation of a pharmaceutical composition intended for the treatment and/or prevention of Parkinson's, Alzheimer's, Huntington's or ALS disease.

17. Pharmaceutical composition comprising one or more defective recombinant adenoviruses according to one of Claims 1 to 14.

18. Pharmaceutical composition according to Claim 17, characterized in that it is in injectable form.

19. Pharmaceutical composition according to Claim 17 or 18, characterized in that it comprises between 10^4 and 10^{14} pfu/ml, and preferably 10^6 to 10^{10} pfu/ml of defective recombinant adenoviruses.

20. Mammalian cell infected with one or more defective recombinant adenoviruses according to one of Claims 1 to 14.

21. Cell according to Claim 20, characterized in that it is a human cell.

22. Cell according to Claim 20, characterized in that it is a human cell of the fibroblast, myoblast, hepatocyte, endothelial cell, glial cell or keratinocyte type.

23. Implant comprising infected cells according to Claims 20 to 22 and an extracellular matrix.

24. Implant according to Claim 23, characterized in that the extracellular matrix comprises a gelling compound chosen preferably from

collagen, gelatin, glucosaminoglycans, fibronectin and lectins.

25. Implant according to Claims 23 or 24, characterized in that the extracellular matrix also comprises a support permitting anchorage of the infected cells.

26. Implant according to Claim 25, characterized in that the support consists preferably of polytetrafluoroethylene fibres.